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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

MAKI, STEVEN D

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/029,174	Applicant(s) BOIOCCHI ET AL.	
	Examiner Steven D. Maki	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-72 and 76-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-72 and 76-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>120105</u> . | 6) <input type="checkbox"/> Other: _____ |

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1) The amendment filed 12-1-05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The subject matter contained in the amended description of figure 4 at page 10 of the specification. The original disclosure fails reasonably convey defining a directional tread merely by a test of the tread pattern "appearing different when viewed in one circumferential direction than when viewed from the other circumferential direction" (emphasis added). Also, the original disclosure fails to support describing figure 5 as being a directional tread pattern which "may be, for example, symmetric".

Applicant is required to cancel the new matter in the reply to this Office Action.

2) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3) Claims 60-72, 76 and 78-79 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claims 60 and 78, subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed

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invention (i.e. the new matter) is the subject matter of the directional tire having central blocks wherein "one or both" rows of the central blocks are "approximately cusp-shaped" (claim 60) or "approximately semiparabolic shaped" (claim 78). In the directional tire of figure 5, the same shape is used for the central blocks of both rows. The original disclosure does not describe a directional tire wherein only one row of central blocks are "approximately cusp-shaped" (claim 60) or "approximately semiparabolic shaped" (claim 78).

4) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5) **Claims 35, 39-43, 46-47, 49-54, 56, 60, 64-67, 76 and 78-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 (JP 63-61606) in view of at least one of Hutson et al (US 5,746,849), Nakagawa (JP 6-106916) and Williams (US 4299264).**

Himuro 606 discloses a pneumatic radial tire comprising a tread including a central area (central region) having width TWC and side areas (shoulder regions) each having a width TWS. The pneumatic tire has a radial structure including a carcass and belt structure. The claimed tire construction including the carcass comprising at least one carcass ply and beads is inherent in Himuro 606's pneumatic radial tire. The central region comprises blocks 40. Each shoulder region comprises blocks 40. The blocks 40 in the shoulder region are joined to each other by joined parts 50. As can be

seen from figure 1, the joined parts 50 define a "continuous track" having a continuous lateral wall. Himuro 606 discloses that this center region Tc is preferred to be 30-50% of tread width. The sum of the shoulder regions therefore is 50-70% of the tread width (overlapping the range of less than or equal to 60% of overall width). Since Himuro 606 shows the shoulder regions as having the same width, the width of each shoulder region is 25-35% of tread width (falling within the range of not less than 20% of overall width). The tire has a size of 225/50R16 (low aspect ratio of 50%) and is therefore a high performance tire as claimed. See tire size at lower left of page 4. With respect to the non-directional tread of figure 2, the shoulder blocks are joined and joined parts 50 form a "circumferential portion", rib R is an annular protrusion, a row of central blocks is provided between the joined shoulder blocks and the rib R, and circumferential grooves 20₁, 10₁, 10₂ and 20₂ are first to fourth circumferential grooves. The tread pattern shown in figure 2 is non-directional. However, Himuro 606 expressly teaches that the tread pattern may be a "herringbone pattern centered on the tread's central region CL" and thereby suggests using a directional pattern. See page 4 lines 30-35 of the translation of Himuro 606.

As to claims 35, 60, 78 and 80, it would have been obvious to one of ordinary skill in the art to join the shoulder blocks of a **directional** tread pattern using a connecting portion to obtain the benefit of improving pattern noise and steering stability as per the teachings of Himuro 606 wherein the directional tread pattern comprises a central rib, a pair of shoulder blocks and at least two rows of central blocks in view of:

(1) Himuro 606's disclosure of a non-directional tread pattern having shoulder blocks rows, central blocks rows and a circumferential rib (figure 2),

(2) Himuro 606's teaching that the tread pattern may be a "herringbone pattern" (**directional** pattern) and

(3) at least one of Hutson et al, Nakagawa and Williams, wherein (A) Hutson et al teaches that the disclosed **directional** tread pattern comprising a central rib and six rows of blocks is well suited for use on high performance tires, especially for use on wet road surfaces, (B) Nakagawa teaches that the disclosed **directional** tread pattern comprising a central rib and four rows of blocks is useful to suppress hydroplaning of a "high performance tire" (a tire having an aspect ratio of for example 55%), and (C) Williams teaches that the disclosed **directional** tread pattern comprising one central rib and four rows of blocks / two central ribs and six rows of blocks improves wet grip.

As to claims 60 and 78, it would have been obvious to provide Himuro's center blocks between the joined shoulder blocks and the central rib with a cusp shape (claim 60) / semiparabolic shape (claim 78) in view of the suggestion from at least one of Hutson et al and Nakagawa to configure central blocks of a directional tread with a cusp shape / semiparabolic shape.

As to claim 35, it would have been obvious to use shoulder blocks rows, outer central block rows, inner central block rows and two ribs depending on the desired tread width / number of blocks in view of Williams's suggestion to use six block rows with two circumferential ribs (figure 1). In view of the use of the term "adjacent" (a relative term)

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at six lines from bottom of claim 35, claim 35 does not require an asymmetric tread pattern.

As to claims 39-42, note the transverse grooves separating the central blocks.

As to claim 43, Himuro 606 discloses that the center region Tc should be predetermined within 30-50% of tread width. Hence, the central region has a width of 30-50% of the tread width TW. The sum of the shoulder regions therefore is 50-70% of the tread width (overlapping the claimed range of less than or equal to 60% of overall width). Since Himuro 606 shows the shoulder regions as having the same width, the width of each shoulder region is 25-35% of tread width (falling within the claimed range of not less than 20% of overall width).

As to claims 46 and 47, Hutson et al suggests using a varying depth for the transverse grooves between the inner central blocks of a directional tread having a central rib and six block rows to improve stiffness.

As to claim 49, Hutson et al suggests an approximately rhomboid shape for the outer central blocks.

As to claims 50 and 51, Hutson et al suggests inner central blocks have a cusp shape / semiparabolic shape.

As to claim 52, Williams / Hutson et al suggests six circumferential grooves.

As to claims 53, 76 and 79-81, it would have been obvious to one of ordinary skill in the art to provide the inner circumferential grooves with the claimed half wave harmonic in view of Williams suggestion to provide the inner circumferential grooves of

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a directional tread pattern with a sawtooth inner edge and a straight outer edge. As to claims 76, 79 and 81, Williams also suggests using two ribs instead of one rib.

As to claim 54, note the inner central blocks of Williams / Hutson et al.

As to claim 56, note the circumferential grooves suggested by Williams / Hutson et al.

As to claims 64-66, note the transverse grooves separating the central blocks.

As to claim 67, Himuro 606 discloses that the center region Tc should be predetermined within 30-50% of tread width. Hence, the central region has a width of 30-50% of the tread width TW. The sum of the shoulder regions therefore is 50-70% of the tread width (overlapping the claimed range of less than or equal to 60% of overall width). Since Himuro 606 shows the shoulder regions as having the same width, the width of each shoulder region is 25-35% of tread width (falling within the claimed range of not less than 20% of overall width).

6) Claims 36-38 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 in view of at least one of Hutson et al, Nakagawa and Williams as applied above and further in view of Europe 143 (EP 790143).

As to claims 36-38 and 61-63, it would have been obvious to use the claimed tire construction since (1) Europe 143 suggests using a belt having plies 7A, 7B each having parallel steel cords embedded in rubber (the cords in one ply crossing the cords in the other ply) and a band 9A having zero degree cords and (2) Europe 143 motivates one of ordinary skill in the art to use this specific construction so that high speed durability and cornering performance are improved.

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7) Claims 44-45 and 68-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 in view of at least one of Hutson et al, Nakagawa and Williams as applied above and further in view of Japan '704 (JP 60-193704).

As to claims 44-45 and 68-69, it would have been obvious to one of ordinary skill in the art to provide the circumferential grooves of Himuro 606's pneumatic radial tire such that the outer wall is inclined more than the inner wall in view of Japan '704's suggestion to incline the outer wall of a circumferential groove of a pneumatic radial tire at an angle beta greater than the angle alpha of the inner wall to improve drainage wherein Japan 704 teaches that this circumferential groove construction may be used for a rib pattern , block pattern, rib-lug pattern or rib block pattern (page 7 of translation).

As to claims 45 and 69, the claimed angles for the circumferential groove would have been obvious and could have been determined without undue experimentation in view of Japan '704's suggestion to incline one wall at an angle beta of 10-30 degrees and to incline the other wall at an angle alpha of 0-5 degrees such that the resulting *asymmetrical* circumferential groove, which has rounded bottom edges, improves drainage.

8) Claims 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 in view of at least one of Hutson et al, Nakagawa and Williams as applied above and further in view of Japan '106 (JP 4-143106) and/or Japan '105 (JP 11-1105).

As to claims 70 and 71, it would have been obvious to one of ordinary skill in the art to provide the transverse grooves in the central region of Himuro 606's high

performance tire such that the bottom wall has a variable depth including an inclined profile decreasing towards one of the circumferential grooves in view of (1) Japan '106's teaching to use a curved convex bottom for transverse grooves such that the inclined profile decreases from the middle of the transverse groove towards one of the circumferential grooves so as to suppress noise without sacrificing wettability (figure 3b) and/or (2) Japan '105's teaching to use a curved bottom for transverse grooves in a high performance tire (225/50R16) having improved straight running stability such that the inclined profile decreases from one circumferential groove to the other circumferential groove (figure 3). With respect to inclined profile decreasing, claim 71 fails to require the profile to decrease along the entire length of the transverse groove and thereby fails to require groove bottom different from that suggested by Japan '106. In any event: the claimed groove bottom is considered to clearly read on the groove bottom illustrated by Japan '105 in figure 3.

9) Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 in view of at least one of Hutson et al, Nakagawa and Williams and further in view of Japan 704 as applied above and further in view of Japan '106 and/or Japan '105.

As to claim 77, Japan 106 and Japan 105 are applied for the same reasons given for claims 70 and 71.

10) Claims 48, 57-59 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 in view of at least one of Hutson et al, Nakagawa

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and Williams as applied above and further in view of Great Britain 795 (GB 1212795).

As to claims 48, 57-59 and 72, it would have been obvious to one of ordinary skill in the art to add the claimed sipes to the connected "shoulder blocks" of Himuro 606 since Great Britain 795 suggests adding transverse sipes 36 to connected shoulder blocks for enhancing grip.

11) Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 in view of at least one of Hutson et al, Nakagawa and Williams as applied above and further in view of Ushikubo et al (US 4947911).

As to claim 55, it would have been obvious to one of ordinary skill in the art to provide the blocks of the first row with a circumferential recess in view of Ushikubo et al's suggestion to form a shallow circumferential recess in blocks adjacent a shoulder region to prevent blow out.

12) Claims 76 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Himuro 606 in view of at least one of Hutson et al, Nakagawa and Williams as applied above and further in view of Japan 505 (JP 64-36505).

As to claims 76 and 79, it would have been obvious to one of ordinary skill in the art to use two ribs instead of one in view of Japan 505's suggestion to use one or two ribs in a directional tread pattern.

Allowable Subject Matter

13) Claims 51 and 53 are objected to as being dependent upon a rejected base claim, but would be allowable if (1) rewritten in independent form including all of

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the limitations of the base claim and any intervening claims and (2) appropriately amended to recite that the "the outer central blocks of the second row are delimited on one axial side by the second annular projection and are delimited, on an axially opposite side, by the fourth circumferential groove so that the tread has an asymmetric tread pattern--.

Although an asymmetric tread pattern including central block which are approximately semiparabolic shaped is known per se as shown by Schomburg, there is no motivation to *further modify* Himuro 606 such that the resulting asymmetric tread pattern comprises the inner central blocks being "approximately semiparabolic-shaped" (claim 51) or the first circumferential groove comprising a "half-wave harmonic course" (claim 53) *in combination with* the limitations of claim 35.

Remarks

14) Applicant's arguments with respect to claims 35-72 and 76-81 have been considered but are moot in view of the new ground(s) of rejection.

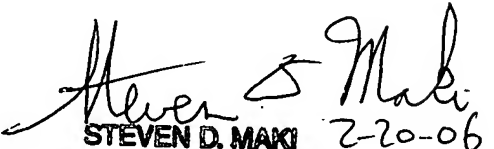
15) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
February 20, 2006


STEVEN D. MAKI 2-20-06
PRIMARY EXAMINER